

What is claimed is:

CLAIMS

1. An isolated, enriched or purified nucleic acid molecule encoding a PTP05 or a PTP10 polypeptide.

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s/w* 2. The nucleic acid molecule of claim 1, wherein said nucleic acid molecule comprises a nucleotide sequence that

(a) encodes a polypeptide having the full length amino acid sequence set forth in SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8;

(b) is the complement of the nucleotide sequence of (a);

(c) hybridizes under highly stringent conditions to the nucleotide molecule of (a) and encodes a naturally occurring PTP05 or PTP10 polypeptide;

(d) encodes a PTP05 or PTP10 polypeptide having the full length amino acid sequence of the sequence set forth in SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8, except that it lacks one or more of the following

segments of amino acid residues: 1-187, 188-420, 421-426 of SEQ ID NO:5, 44-80, 225-457, 458-463 of SEQ ID NO:6, or 1-87, 188-405, 406-412 of SEQ ID NO:7;

(e) is the complement of the nucleotide sequence of (d);

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(f) encodes a polypeptide having the amino acid sequence set forth in SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8 from amino acid residues 1-187, 188-420, 421-426 of SEQ ID NO:5, 44-80, 225-457, 458-463 of SEQ 5 ID NO:6, or 1-87, 188-405, 406-412 of SEQ ID NO:7;

(g) is the complement of the nucleotide sequence of (f);

(h) encodes a polypeptide having the full length amino acid sequence set forth in SEQ ID NO:5, SEQ ID NO:6, 10 SEQ ID NO:7, or SEQ ID NO:8, except that it lacks one or more of the domains selected from the group consisting of a N-terminal domain, a catalytic domain, and a C-terminal domain; or

(i) is the complement of the nucleotide sequence 15 of (h).

3. The nucleic acid molecule of claim 2, wherein said nucleic acid molecule is isolated, enriched, or purified from a mammal.

4. The nucleic acid molecule of claim 3, wherein 20 said mammal is a human.

5. The nucleic acid molecule of claim 1, further comprising a vector or promoter effective to initiate transcription in a host cell.

6. A nucleic acid probe for the detection of nucleic acid encoding a PTP05 or a PTP10 polypeptide in a sample.

7. The probe of claim 6 wherein said polypeptide comprises at least 6 contiguous amino acids of the amino acid sequence shown in SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8.

8. A nucleic acid molecule comprising one or more regions that encode a PTP05 or a PTP10 polypeptide or a PTP05 or a PTP10 domain polypeptide, wherein said PTP05 or 10 PTP10 polypeptide or said PTP05 or PTP10 domain polypeptide is fused to a non-PTP05 or non-PTP10 polypeptide.

9. A recombinant cell comprising a nucleic acid molecule encoding either
(a) a PTP05 or a PTP10 polypeptide;
15 (b) a PTP05 or a PTP10 domain polypeptide; or
(c) a PTP05 or a PTP10 polypeptide or PTP05 or PTP10 domain polypeptide fused to a non-PTP04 polypeptide.

10. An isolated, enriched or purified PTP05 or PTP10 polypeptide.

20 11. The polypeptide of claim 10, wherein said polypeptide is a fragment of the protein encoded by the

full length amino acid sequence set forth in SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8.

12. The polypeptide of claim 10, wherein said polypeptide comprises an amino acid sequence having

- 5 (a) the full length amino acid sequence set forth in SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8;
- 10 (b) the full length amino acid sequence of the sequence set forth in SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8, except that it lacks one or more of the following segments of amino acid residues: 1-187, 188-420, 421-426 of SEQ ID NO:5, 44-80, 225-457, 458-463 of SEQ ID NO:6, or 1-87, 188-405, 406-412 of SEQ ID NO:7;
- 15 (c) the amino acid sequence set forth in SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8 from amino acid residues 1-187, 188-420, 421-426 of SEQ ID NO:5, 44-80, 225-457, 458-463 of SEQ ID NO:6, or 1-87, 188-405, 406-412 of SEQ ID NO:7; or
- 20 (d) the full length amino acid sequence set forth in SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, or SEQ ID NO:8 except that it lacks one or more of the domains selected from the group consisting of an N-terminal domain, a catalytic domain, and C-terminal domain.

13. An antibody or antibody fragment having specific binding affinity to a PTP05 or a PTP10 polypeptide or a PTP05 or a PTP10 domain polypeptide.

14. A hybridoma which produces an antibody having 5 specific binding affinity to a PTP05 or a PTP10 polypeptide.

15. A method for identifying a substance capable of modulating PTP05 or PTP10 activity comprising the steps of:

- (a) contacting a PTP05 or a PTP10 polypeptide with a 10 test substance, and
- (b) determining whether said substance alters the activity of said polypeptide.

16. A method for identifying a substance capable of modulating PTP05 or PTP10 activity in a cell comprising 15 the steps of:

- (a) expressing a PTP05 or a PTP10 polypeptide in a cell,
- (b) adding a test substance to said cells, and
- (c) monitoring a change in cell phenotype, cell 20 proliferation, cell differentiation, PTP05 or PTP10 catalytic activity, or the interaction between a PTP05 or a PTP10 polypeptide and a natural binding partner.

17. A method of preventing or treating an abnormal condition by administering to a patient in need of such treatment a compound that modulates the function of a PTP05 or a PTP10 polypeptide.

5 18. The method of claim 17, wherein said abnormal condition involves an abnormality in PTP05 or PTP10 signal transduction pathway.

19. The method of claim 18, wherein said abnormal condition is cancer.

10 20. The method of claim 17, wherein said compound modulates the function of a PTP05 or a PTP10 polypeptide *in vitro*.

21. A kit, comprising the compound of claim 17 and a protocol for the use of said compound.

15 22. The kit of claim 21, wherein said protocol is approved by the Food and Drug Administration.

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